

WHAT IS CLAIMED IS:

1. An IR and UV absorbing soda-lime-silica glass of a neutral tint having, in a nominal 4 mm thickness, a visible light transmittance of at least 70%, a direct solar heat transmission at least twelve percentage points below the visible light transmittance, a dominant wavelength not greater than 560 nm and a color purity of no more than 6%, said glass on a weight basis including as essential ingredients a total iron content expressed as Fe_2O_3 from about 0.3% to 0.7%, from about 0.5 to 10 ppm Se, from about 3 to 25 ppm Co_3O_4 , 0 to 50 ppm NiO and 0 to 1.5% TiO_2 , and having a ferrous iron to total iron (as Fe_2O_3) ratio in the range of 21 to 34.

2. An IR and UV absorbing soda-lime-silica glass as claimed in claim 1, wherein said direct solar heat transmission is at least fifteen percentage points below the visible light transmittance.

3. An IR and UV absorbing soda-lime-silica glass as claimed in claim 1, having an ultraviolet radiation transmission less than 55%.

4. An IR and UV absorbing soda-lime-silica glass as claimed in claim 3, wherein said ultraviolet radiation transmission is less than 50%.

5. An IR and UV absorbing soda-lime-silica glass of a neutral tint having, in a nominal 4 mm thickness, a visible light transmittance of at least 70%, a direct solar heat transmission at least fifteen percentage points below the visible light transmittance, a dominant wavelength not greater than 560 nm and a color purity of no more than 6%, said glass on a weight basis including as essential ingredients a total iron content expressed as Fe_2O_3 from about

0.45% to 0.65%, from about 1 to 5 ppm Se, from about 8 to 20 ppm Co₃O₄, 0 to 35 ppm NiO and 0 to 1% TiO₂, and having a ferrous iron to total iron (as Fe₂O₃) ratio in the range of 25 to 31.

6. An IR and UV absorbing soda-lime-silica glass as claimed in claim 5, wherein
said direct solar heat transmission is at least 20 percentage points below the visible light
5 transmittance.

7. An IR and UV absorbing soda-lime-silica glass as claimed in claim 5, wherein
said color purity is no more than 5%.

8. An IR and UV absorbing soda-lime-silica glass as claimed in claim 5, wherein
said color purity is no more than 3%.

9. An IR and UV absorbing soda-lime-silica glass as claimed in claim 5, having an
ultraviolet radiation transmission less than 55%.

10. An IR and UV absorbing soda-lime-silica glass as claimed in claim 9, wherein
said ultraviolet radiation transmission is less than 50%.

11. An IR and UV absorbing soda-lime-silica glass of a neutral tint having a base
glass composition comprising in percent by weight:

| | |
|--------------------------------|---------|
| SiO ₂ | 65 - 80 |
| Na ₂ O | 10 - 20 |
| CaO | 5 - 15 |
| MgO | 0 - 10 |
| Al ₂ O ₃ | 0 - 5 |
| K ₂ O | 0 - 15 |
| BaO | 0 - 5 |
| B ₂ O ₃ | 0 - 5 |

25 and traces of melting and refining aids, if any, and colorants consisting essentially of:

5 ~~Fe₂O₃ (total iron) 0.3 - 0.7 weight percent;
Se 0.5 - 10 ppm;
Co₃O₄ 3 - 25 ppm;
TiO₂ 0 - 1.5 weight percent;
NiO 0 - 50 ppm; and
FeO content to provide a ratio of ferrous iron to total iron in the range of 21 to 34,~~

the glass having a visible light transmittance of at least 70%, a direct solar heat transmission at
least 12 percentage points below the visible light transmittance, a dominant wavelength not
10 greater than 560 nm and a color purity of no more than 6% at a nominal glass thickness of 4 mm.

12. In a process for producing an IR and UV absorbing soda-lime-silica glass of a
neutral tint containing oxides of iron and cobalt and having a ferrous iron to total iron (as Fe₂O₃)
ratio in the range of 21 to 34, including admixing, heating and melting a soda-lime-silica float
glass batch mixture comprising sand, soda ash, dolomite, limestone, and a sulfate selected from
15 the group consisting of salt cake and gypsum, the improvement comprising including in said
batch wuestite as at least a partial source of the iron oxides in the resulting glass.

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